

Dear Student:

The Educational Programs Office (EPO) at the NASA Glenn Research Center (GRC) invites you to participate in the **Exploring Program**.

GRC will sponsor four Explorer posts concentrating on activities associated with different careers. The Explorer posts are as follows:

- Post 630 – Aeronautics Activities (aviation activities focusing on aerodynamics)
- Post 631 – Computer Technology (personal computing)
- Post 632 – Balloon Sat (students construct data acquisition balloons)
- Post 633 – Human Space Exploration (robotics/communications/human health)

You and your parents or guardians are invited to attend our Open House/Registration meeting on **Tuesday, September 8, 2009, from 5:30 p.m. – 7:30 p.m.**, in the Development Engineer Building (DEB), Building 500, auditorium, at NASA GRC, 21000 Brookpark Road, Cleveland, OH.

During this meeting we will discuss program plans and activities, answer your questions and complete the registration process. Explorer participants must be a U.S. citizen, at least 14 years of age, and have completed the eighth grade. The program is scheduled to begin at the end of September, 2009, and continue through the end of April, 2010. NASA Explorers will meet for two hours, once per week, on weekday evenings. Meeting dates and times will be discussed at the Open House.

Please note, registration for Exploring is \$25.00, and should be brought to this meeting to expedite enrollment. Registration fees for Active participants in the Boy Scouts of America (BSA) and Girl Scouts of America (GSA) are reduced to \$10.00. Enrollment fees will be accepted in the form of **cash only**. NO CHECKS WILL BE ACCEPTED!

Open House attendance is mandatory for participation in the program. Please call the GRC EPO at (216) 433-6656 no later than Thursday, September 3, 2009, to confirm your attendance at the Open House/Registration. For security reasons, we must have your name (and the name of anyone else in your party) on our guest list. Additionally, all attendees must present a photo ID upon arrival at GRC (children excluded).

If you have any questions or concerns, please contact me at (216) 433-8006. We hope to see you on September 8, 2009.

Sincerely,

Stephanie D. Brown-Houston  
Exploring Program Manager  
Educational Programs Office

National Aeronautics and Space Administration





## NASA GLENN RESEARCH CENTER

### 2009 TO 2010 EXPLORING PROGRAM

#### Program Description

The Exploring Program is a collaborative undertaking of Glenn Research Center's (GRC's) Educational Programs Office (EPO) and the Boy Scouts of America. This educational program provides exposure to research and technology activities specific to GRC and is designed to promote students' interest in Science, Technology, Engineering and Mathematics (STEM).

Exploring is part of Learning for Life's career education program, affiliated with the Boy Scouts of America (BSA), for young men and women who are 14 (and have completed the eighth grade) through 20 years old. Explorer posts are usually initiated by local community organizations by matching their expertise, people, and resources to that of interests of young people in the community.

NASA GRC in collaboration with the Boy Scouts of America, has hosted Explorer posts since the 1970s. GRC volunteers, who serve as Exploring Advisors, lead these posts and meet once a week from October through April to explore various aspects of science, engineering, technology, NASA, and GRC.

#### Program Goal

The primary goal of the Exploring Program is to expose students to different career choices. The primary goal of NASA GRC's Explorer posts is to expose students to various aspects of STEM career challenges within NASA and GRC.

The EPO is committed to increasing the number and diversity of students from underrepresented and underserved communities in NASA-related STEM fields. Traditionally, underrepresented groups in STEM include females, African-Americans, Hispanics, Native Americans, Pacific Islanders (natives of the Philippines, Guam, American Samoa, or Micronesia), and disabled students. **Please be advised that while the program is open to all equally qualified candidates**, GRC is very interested in recruiting applicants who belong to a recognized underrepresented group in STEM.

#### Glenn Research Center

The NASA vision—To improve life here, To extend life to there, To find life beyond. The NASA mission—To pioneer the future in space exploration, scientific discovery, and aeronautics research. As one of NASA's 10 field centers, the John H. Glenn Research Center at Lewis Field supports all NASA missions and the major programs of our Agency.

GRC is located in the Great Lakes region of Ohio and occupies a 350-acre site adjacent to Cleveland Hopkins International Airport. The Center comprises over 140 buildings that contain a unique collection of world-class facilities. NASA GRC also includes the 6400-acre Plum Brook Station near Sandusky, Ohio.

GRC works as a diverse team in partnership with government, industry, and academia to increase national wealth, safety, and security, protect the environment, and explore the universe. As NASA moves forward to fulfill the Vision for Space Exploration, GRC is focusing on efforts related to Exploration Systems, such as technological advancements in space flight systems, aer propulsion, space propulsion, power systems, nuclear systems, communication, and human research.

## Eligibility Requirements

- The applicant must be a U.S. citizen and 14 years old (and have completed the eighth grade) by the program start date (September 30, 2009).
- The applicant must be a permanent resident of Northeast Ohio and be able to attend the weekly meetings.

## Program Requirements Note

- Students who were 2008 program participants must submit an application and meet the eligibility requirements.
- Students who participated in the same post for 2 years must select a different post.
- Students and parent(s)/guardians(s) are required to attend the Open House Registration Meeting and the orientation.
- Students are expected to adhere to the tenure period (October to April), no exceptions.
- Students must be recommended by a math and science teacher to participate.
- Students must complete Student Profile and Program Feedback forms. Completion of these forms is a program requirement, as your feedback is integral to the success of our programs.

## Application Information

Students seeking to participate in this program must submit a completed application on the night of Open House on September 8, 2009, to be held in the Development Engineering Building (DEB) auditorium, building 500, at the address below. **Dues for the program are \$25.00 per post membership (multiple membership is permitted if slots are available). Participants of Boy Scouts of America dues are \$10.00 per post. No personal checks will be accepted for program dues.**

NASA Glenn Research Center  
Educational Programs Office  
21000 Bookpark Road  
Cleveland, OH 44135-3191

## The four activity groups in the GRC Exploring Program are

### Post 630, Aeronautics Activities

Youth in this group explores the basic principles of aerospace vehicles and propulsion systems. The meetings/discussions are led by GRC engineers and are held at a NASA GRC site. Past activities have included gas turbine engine experiments, wind tunnel model development and testing, various computer model developments, model rocket development, and testing and free flight launches.

### Post 631, Computer Technology

Youth in this group participate in computer activities based on individual ability level. They learn about invigorating fields in computer technology such as animation and robotics as well as programming and graphics! They are also exposed to the basic architecture of computers!

### Post 632, Balloon Sat Technology

Youth in this group will build, test, launch to 100,000 ft, and recover a payload. Students will have a chance to develop and fly payloads for a flight mission like that of a sounding rocket. They will learn about the atmosphere, experiment design, electronics, and communications associated with the mission. They will develop and fly a Balloon Sat payload into the midstratosphere, nearly 20 miles above the ground.

### Post 633, Human Space Flight

Youth in this group, through hands-on activities, will explore the technology required to send astronauts to Mars! Discover interesting things like what is required to ensure astronaut health in space.

**Program Start Dates**

Post 630—October 6, 2009

Post 631—October 1, 2009

Post 632—September 30, 2009

Post 633—October 6, 2009

**Program Selection Process**

Selection in this program is based on the following:

- Eligibility
- Application completeness and accuracy
- Student preference according to first, second, or third choices



**EDUCATIONAL PROGRAMS OFFICE**  
**2009 TO 2010 EXPLORING PROGRAM STUDENT APPLICATION FORM**

*Please print in black or blue ink only.*

**The information provided on this page will remain strictly confidential.**

Name \_\_\_\_\_ Date of birth \_\_\_\_\_  
Last First M.I. mm dd year (e.g., 10/15/1987)

Place of birth \_\_\_\_\_ Gender ☐ Male ☐ Female  
City, State, Country

U.S. Citizen ☐ Yes ☐ No

Note: If U.S. citizen and born outside the United States or Puerto Rico you must provide the information requested below and if selected provide documentation prior to start date.

Naturalization no. \_\_\_\_\_ Date issued \_\_\_\_\_ Date expired \_\_\_\_\_  
Passport no. \_\_\_\_\_ Date issued \_\_\_\_\_ Date expired \_\_\_\_\_

Home mailing address (If you live in an apartment, you must include the apartment number.)

Street address

City \_\_\_\_\_ State \_\_\_\_\_ Zip code \_\_\_\_\_

Telephone no.: (\_\_\_\_\_) \_\_\_\_\_ Alternate telephone no.: (\_\_\_\_\_) \_\_\_\_\_

E-mail address: \_\_\_\_\_ Alternate e-mail address: \_\_\_\_\_

**In order to determine the degree to which members of each ethnic/racial group are reached by this program, NASA requests that the student check the appropriate block(s) below. Submission of this information is VOLUNTARY.**

- Ethnic background (check one that best applies)
- ☐ Hispanic/Latino(a)
- ☐ Caucasian/White (Non-Hispanic)
- ☐ African-American/Black (Non-Hispanic)
- ☐ Native Hawaiian/Pacific Islander (Non-Hispanic)
- ☐ Asian American (Non-Hispanic)
- ☐ Native American/Alaskan Native (Non-Hispanic)
- ☐ Two or more races

Individual with a disability\* ☐ Yes ☐ No

Please list any special accommodations required:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\*A person having a physical or mental impairment that substantially limits one or more major life activities, has a record of such impairment, or is regarded as having such impairment.

**Certification**

I certify by my signature below, that I am a citizen of the United States of America and that all information contained in this application is correct. I further understand and agree that any misrepresentation or inaccurate information on this completed application will be cause for disqualification for consideration and from participation in the Exploring and other NASA programs. **I must participate for the full duration of the program (September 2009 through April 2010) and failure to do so or abide by program policies will result in my termination.**

Printed legal name: \_\_\_\_\_

Student's signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Office use only**

Date received \_\_\_\_\_

Date processed \_\_\_\_\_

Initials \_\_\_\_\_

630 631 632 633

Print last name, first name, M.I. \_\_\_\_\_

### School Information

Name and complete address of high school (*Do not abbreviate school name.*) ☐ Check if homeschooled

School name

Street address

City

State

Zip code

School e-mail address: \_\_\_\_\_

Academic level as of fall 2009

☐ 9th grader ☐ 10th grader

☐ 11th grader ☐ 12th grader

Planned Graduation Date \_\_\_\_\_

### Placement Information

I am interested in the following activity groups: rank in order of preference 1 to 3 (1 is the highest, 3 is the lowest)

\_\_\_\_\_ Aeronautics—Post 630

**Tuesday, 5 to 7 p.m.**

\_\_\_\_\_ Balloon Sat Technology—Post 632

**Wednesday, 5 to 7 p.m.**

\_\_\_\_\_ Human Space Exploration—Post 633

**Tuesday, 5 to 7 p.m.**

\_\_\_\_\_ Computer Technology—Post 631

**Thursday, 5 to 7 p.m.**

Check those that apply to you:

- ☐ I have been in the Computer post for \_\_\_\_\_ years  
☐ I have been in the Aeronautics post for \_\_\_\_\_ years  
☐ I have been in the Balloon Sat post for \_\_\_\_\_ years  
☐ I have been in the Human Space post for \_\_\_\_\_ years

Comments: \_\_\_\_\_

**Have you previously applied for or participated in a NASA program?** ☐ Yes ☐ No ✓ Check any of the following NASA programs you have previously applied for (A) or participated in (P), and indicate the year:

(A)	(P)		Year	(A)	(P)		Year
<input type="checkbox"/>	<input type="checkbox"/>	GRC Engineering Technology		<input type="checkbox"/>	<input type="checkbox"/>	GRC Shadowing	
<input type="checkbox"/>	<input type="checkbox"/>	GRC Exploring		<input type="checkbox"/>	<input type="checkbox"/>	GRC TSU College Bound	
<input type="checkbox"/>	<input type="checkbox"/>	GRC LCCC/NASA Technology Outreach Program (TOP)		<input type="checkbox"/>	<input type="checkbox"/>	FIRST	
<input type="checkbox"/>	<input type="checkbox"/>	GRC LCCC/NASA Young Women Exploring STEM		<input type="checkbox"/>	<input type="checkbox"/>	NASA Explorers School School name _____	
<input type="checkbox"/>	<input type="checkbox"/>	GRC NASA Camp for Aerospace Education at Oberlin College		<input type="checkbox"/>	<input type="checkbox"/>	SEMAA Site name _____	
<input type="checkbox"/>	<input type="checkbox"/>	GRC N.A.S.A. Project		<input type="checkbox"/>	<input type="checkbox"/>	Other _____	

### How did you learn about the program?

- ☐ Faculty member of school official  
☐ Group visit to GRC  
☐ Inquiry to NASA about summer opportunities  
☐ NASA Web site  
☐ GRC Educational Programs staff  
☐ GRC Educational Programs Web site  
☐ Friend who participated in LERCIP  
☐ Previously an LERCIP participant  
☐ Other (please specify) \_\_\_\_\_

Relative who works for NASA/NASA contractor:

\_\_\_\_\_  
*Name/relationship*

\_\_\_\_\_  
*Company name/area/organization*



Print last name, first name, M.I. \_\_\_\_\_

## ESSAY

Student must prepare a **typed or legibly** printed (using black ink) essay addressing the following:

- Reason(s) for wanting to participate in the NASA GRC Exploring Program.
- Tell what you would like to achieve during your tenure in the program.
- What area(s) would you like to improve academically (i.e., math, science, etc.)?

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



Print last name, first name, M.I. \_\_\_\_\_

## MATH TEACHER RECOMMENDATION FORM

**THIS FORM SHOULD BE RETURNED AS A PART OF THE APPLICANT'S PACKAGE.**

**When returning this form, please give the applicant ample time to meet the deadline. NASA must receive applications no later than September 8, 2009. Please make two copies of the completed teacher recommendation form, insert original and two copies in an envelope, sign your name across the seal, and return envelope to applicant for package inclusion.**

Teacher's Name and School \_\_\_\_\_

Provide address for invitation to student's presentation. \_\_\_\_\_

How long have you known the student and in what capacity? \_\_\_\_\_

**How would you rate the student in the following areas? (Check *one per category*)**

	<b>Excellent</b>	<b>Very Good</b>	<b>Average</b>	<b>Poor</b>
Accepts Responsibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conduct	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exhibits Leadership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Follows Rules and Directions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Independence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Initiative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Level of Math Interest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Team Player	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Writing Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Overall Program Recommendation**

- ☐ Highly Recommended
- ☐ Recommended
- ☐ Recommend With Reservation
- ☐ Do Not Recommend

**Additional Comments:**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

You may be contacted for additional information, please provide:

Telephone no: (\_\_\_\_) \_\_\_\_\_

E-mail address: \_\_\_\_\_



Print last name, first name, M.I. \_\_\_\_\_

**SCIENCE OR TECHNOLOGY TEACHER RECOMMENDATION FORM**  
**THIS FORM SHOULD BE RETURNED AS A PART OF THE APPLICANT'S PACKAGE.**

**When returning this form, please give the applicant ample time to meet the deadline. NASA must receive applications no later than September 8, 2009. Please make two copies of the completed teacher recommendation form, insert original and two copies in an envelope, sign your name across the seal, and return envelope to applicant for package inclusion.**

Teacher's Name and School
Provide address for invitation to student's presentation.
How long have you known the student and in what capacity?

**How would you rate the student in the following areas? (Check *one per category*)**

	Excellent	Very Good	Average	Poor
Accepts Responsibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conduct	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exhibits Leadership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Follows Rules and Directions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Independence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Initiative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Level of Science/Technology Interest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Team Player	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Writing Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<u><b>Overall Program Recommendation</b></u>	<u><b>Additional Comments:</b></u>
<input type="checkbox"/> Highly Recommended	
<input type="checkbox"/> Recommended	
<input type="checkbox"/> Recommend With Reservation	
<input type="checkbox"/> Do Not Recommend	

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

You may be contacted for additional information, please provide:

Telephone no: ( ) \_\_\_\_\_

E-mail address:



Print last name, first name, M.I. \_\_\_\_\_

## PARENT/GUARDIAN DATA

### TO STUDENT:

Please have your parent(s)/guardian(s) carefully read and complete both sides of this form. You must include it in your application package. Your application is incomplete without the signature of a parent or guardian.

### TO PARENT/GUARDIAN:

Please read the following information in its entirety, fill in the appropriate data (please print), and indicate your approval on the signature line on the reverse side of the form. **Note: This information will remain strictly confidential.**

Last name of father or male guardian	First	M.I.
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Home address

City	State	Zip code	Telephone no. (Best time to call)
------	-------	----------	--------------------------------------

Occupation	Employer	Work telephone no. or cell no. _____
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Last name of mother or female guardian	First	M.I.
--	-------	------

Home address

City	State	Zip code	Telephone no. (Best time to call)
------	-------	----------	--------------------------------------

Occupation	Employer	Work telephone no. or cell no. _____
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**Complete reverse side of form.**

Print last name, first name, M.I. \_\_\_\_\_

## PARENT/GUARDIAN PERMISSION FORM

I understand that my child, \_\_\_\_\_, is applying to

*Student's name (please print)*

participate in the GRC Exploring Program from September 2009 through April 2010.

This program entity, also referred to as the NASA GRC Exploring Program, is conducted 1 day a week from 5 to 7 p.m. A NASA sponsor or NASA contractor will provide the student's direct supervision. However, the NASA GRC Educational Programs Office (EPO) manages the overall program.

If selected for the above-mentioned program, I certify by my signature below that

- ❖ I grant permission for my son/daughter to participate in the NASA Exploring Program and all program-related activities.
- ❖ I ensure that my child will have transportation to and from the NASA GRC.
- ❖ I grant permission for two teachers (math and science) selected by my son/daughter to complete the Teacher Recommendation Forms.
- ❖ I am aware that the Teacher Recommendation Forms will be used as a selection factor for the Exploring Program at the NASA GRC.
- ❖ I understand that my child MUST adhere by all the program rules and guidelines established both by NASA and the Educational Programs Office in order to participate in this program. If my child does not adhere to the rules and regulations, I understand that they could be terminated.
- ❖ I understand the failure to abide by program/safety/security policies by my child, could result in termination from the program.
- ❖ I understand that my child MUST be courteous and respectful to ALL of the program staff and students. If they are not, this is grounds for dismissal from the program.
- ❖ I understand that if my child is dismissed from the program for any of the above reasons, he/she will NOT be eligible for participation in NASA GRC education programs in the future.
- ❖ I understand that my child is responsible for completing the required Profile and Feedback forms.
- ❖ I guarantee my child's participation for the **entire duration of the program**. *(In the event he/she cannot fulfill this commitment, I understand that his/her position as an Exploring Program student will terminate and dues are nonrefundable.)*
- ❖ I authorize EPO to use any photographs of my son/daughter taken during their Exploring Program participation for promotion activities (i.e., Web site, newsletter, and promotion materials).
- ❖ I authorize the staff to release my child's name and address to educational organizations so he/she can be provided with current information on scholarships, other educational programs, and college financial aid information to enable NASA and its contractors to track and monitor the progress of the Exploring Program participants.

Emergency contact: \_\_\_\_\_  
(Please print)

Relationship Telephone no. Cell/pager no.

Parent's/guardian's signature of consent Date



Print last name, first name, M.I. \_\_\_\_\_

## **APPLICATION PACKAGE CHECKLIST**

Before submitting this application, you should read it thoroughly. Special attention should be given to eligibility requirements, dates, and deadlines. Be sure that you have supplied all information and materials requested. You are encouraged to keep a copy of your completed application package, as we are unable to return any application materials submitted for the program. The application should be typed, if possible, or printed using black ink.

### **REQUIRED INFORMATION FOR COMPLETED APPLICATION PACKAGE** *(check when completed):*

1. \_\_\_\_ ORIGINAL, SIGNED 2009 TO 2010 EXPLORING PROGRAM APPLICATION FORM  
(Pages 1–12)
2. \_\_\_\_ MATH TEACHER RECOMMENDATION FORM
3. \_\_\_\_ SCIENCE TEACHER RECOMMENDATION FORM
4. \_\_\_\_ PARENT/GUARDIAN PERMISSION FORM
5. \_\_\_\_ ESSAY
6. \_\_\_\_ TWO COPIES OF COMPLETE APPLICATION  
**(DO NOT MAKE COPIES OF TEACHER RECOMMENDATION LETTERS)**

*Note: Application package will not be considered eligible unless the required copies are enclosed.*

**All application materials are due by September 8, 2009, at the Open House event.**

**NASA Glenn Research Center  
21000 Brookpark Road, Building 500 Auditorium  
Cleveland, OH 44135–3191**

**Should you have any questions, please contact  
Stephanie Brown-Houston  
Telephone no.: 216–433–8006  
E-mail: [Stephanie.D.Brown-Houston@nasa.gov](mailto:Stephanie.D.Brown-Houston@nasa.gov)**

**No personal checks will be accepted for program dues.**

**[www.nasa.gov](http://www.nasa.gov)**